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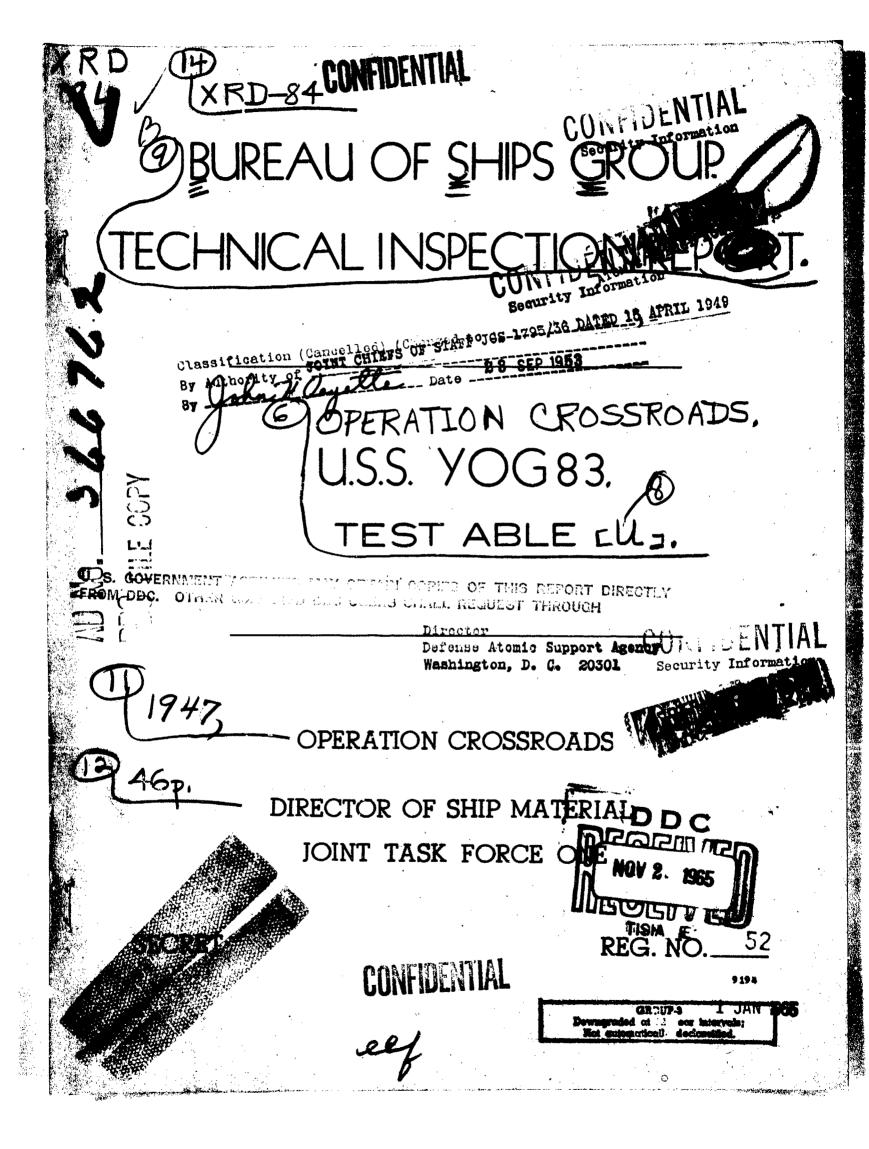
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CONFIDENTIAL

BUREAU OF SHIPS GROUP TECHNICAL INSPECTION REPORT

Director ---Defense Atomic Support Agency Washington, D. C. 20301

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TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

- I. Target Condition After Test.
 - (a) Drafts after test, general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

(b) Structural Damage.

HULL

The top of the concrete pump room house amidships has two transverse cracks approximately one foot away from each bounding transverse bulkhead and a longitudinal crack at midlength near the port edge. The three transverse beams below the deck have cracked near the splays with the vertical house side frames.

The wooden wheel house is intact but is displaced forward and to port. The wooden sides around the tank below the pilot house were blown down.

Miscellaneous light topside equipment has been blown from its foundations. The foremast is blown down and the flag pole on the poop deck is bent to port.

MACHINERY

The vent pipe to the after peak tank was bent to port about 15 degrees at the point where it rises above the main deck. The wire cable of the steering gear from the pilot house was tightened by movement to port of the pilot house.

ELECTRICAL

Wiring, fixtures and indicating instruments in pilot house structure and on mast were damaged due to distortion and

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splintering of wooden bulkheads and breakage of the wooden mast. Structural damage was caused by blast pressure.

(c) Other damage.

HULL

Not observed.

MACHINERY

The inlet pipe of the starboard generator engine was bent and ruptured near its upper end. This pipe was exposed to blast pressure. It had been greatly weakened by corrosion before Test A. There is no other damage to machinery.

ELECTRICAL

Electrical damage was confined to wiring and fixtures in way of structural damage to pilot house, bridge and masts.

II. Forces evidenced and effects noted.

(a) Heat.

HULL

There is rather heavy blistering and scorching of paint, especially on wooden surfaces.

MACHINERY

Paint on vertical surfaces facing the explosion is scorched.

ELECTRICAL

Heat was indicated by scorched paint on exposed surfaces and scorched insulation on exposed wiring. Scorching occurred over the entire length of the vessel on the starboard side and on SECRET USS YOG83

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the after side of exposed thwartship bulkheads. Penetration was through the equivalent of one coat of paint. Vertical surfaces were scorched over the entire surface. Horizontal surfaces were scorched only near the starboard edge and on projections or humps on the horizontal surfaces.

(b) Fires and Explosions.

HULL

Two bags of 155 MM powder and a box of dynamite caps which were exposed on the main deck, burned.

MACHINERY

No evidence.

ELECTRICAL

There was no evidence of fires or explosions in way of electrical equipment.

(c) Shock.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

There was no evidence of shock in way of electrical equipment.

(d) Pressure.

HULL

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Practically all damage on this craft is attributable to the blast. It consisted of cracks in the concrete pump house amidships, moderate damage to the wooden wheel house and distortion and displacement of light structures, such as vent covers, spud locker, gun shields and rigging.

MACHINERY

Blast pressure pushed the wooden pilot house to port, tightened the steering control cable, and damaged the (already badly corroded) starboard engine muffler. The blast came from starboard.

ELECTRICAL

Pressure was evidenced by the forcing of the pilot house structure to port and forward and the wrecking of the wooden bulkheads of the pilot house structure. A negative pressure was indicated above the pilot house by the lifting off of the wooden roof of the pilot house without much disturbance to the sheathing underneath.

(e) Effects peculiar to the Atomic Bomb.

HULL

None.

MACHINERY

Blast pressure and heat of such intensity are apparently peculiar to the Atom Bomb.

ELECTRICAL

Evidence of extreme heat in open spaces without combustion is an effect apparently peculiar to the Atom Bomb.

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III. Results of Test on Target.

(a) Effect on machinery, electrical and ship control.

HULL

Not observed.

MACHINERY

The test had no appreciable effect on machinery or ship control. The steering cable could be easily adjusted. Damage to the generator muffler was negligible and would not have occurred if the muffler had been in good condition. Machinery operable before the test was operated after it.

ELECTRICAL

Steering gear wire control from pilot house was out of adjustment due to the distortion of the wood structure from which it was supported. No other damage was apparent to electrical machinery or ship control.

(b) Effect on gunnery and fire control.

HULL

Not observed.

MACHINERY

No comment.

ELECTRICAL

No electrical damage affected gunnery or fire

control.

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(c) Effect on watertight integrity and stability.

HULL

None.

MACHINERY

No comment.

ELECTRICAL

No electrical damage affected watertight integrity or stability.

(d) Effect on personnel and habitability.

HULL

Exposed personnel would probably have been casualties from the blast, flash burns, or radioactivity. The habitability of the craft is not affected.

MACHINERY

It is estimated that the test would have had no effect on personnel in protected locations, but that those exposed (including those in the wooden pilot house) would have been casualties. Habitability was not affected.

ELECTRICAL

No electrical damage affected personnel or habit-

(e) Effect on fighting efficiency.

HULL

None.

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ability.

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MACHINERY

The efficiency of the vessel as a fuel barge was not impaired.

NOTE: This vessel has no propulsion machinery.

ELECTRICAL

Fighting efficiency was slightly reduced due to damage to steering control from the pilot house.

IV. General Summary of Observers' Impressions and Conclusions.

HULL

Additional information regarding this barge is included in the Bureau of Yards and Docks Report.

MACHINERY

YOG 83 was apparently a short distance outside the limit of serious damage to vessels of her type during Test A.

ELECTRICAL

Electrical damage was superficial and easily repairable by the ships force. Running lights and signal lights were the only items damaged.

V. Preliminary General or Specific Recommendations of Inspection Group.

HULL

None.

MACHINERY

The flimsy wooden pilot house is inconsistent with the construction of the remainder of the vessel, and should be replaced SECRET USS YOG83

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by a stronger one.

ELECTRICAL

None.

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TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

- I. Target Condition After Test.
 - (a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

(b) Structural damage.

The top of the concrete pump room house amidships has two transverse cracks approximately one foot away from each bounding transverse bulkhead and a longitudinal crack at midlength near the port edge. The three transverse beams below the deck have cracked near the splays with the vertical house side frames.

The wooden wheel house is intact but is displaced forward and to port. The wooden sides around the tank below the pilot house were blown down.

Miscellaneous light topside equipment has been blown from its foundations. The foremast is blown down and the flag pole on the poop deck is bent to port.

(c) Other damage.

Not observed.

- II. Forces Evidenced and Effects Noted.
 - (a) Heat.

There is rather heavy blistering and scorching of paint, especially on wooden surfaces.

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(b) Fires and explosions.

Two bags of 155MM powder and a box of dynamite caps which were exposed on the main deck, burned.

(c) Shock.

None.

(d) Pressure.

Practically all damage on this craft is attributable to the blast. It consisted of cracks in the concrete pump house amidships, moderate damage to the wooden wheel house and distortion and displacement of light structures, such as vent covers, spud locker, gun shields and rigging.

(e) Effects peculiar to the atom bomb.

None.

III. Effects of Damage.

(a) Effect on machinery, electrical and ship control.

Not observed.

(b) Effect on gunnery and fire control.

Not observed.

(c) Effect on water-tight integrity and stability.

None.

(e) Effect on personnel and habitability.

Exposed personnel would probably have been casualties from the blast, flash burns, or radioactivity. The habitability of the craft is not affected.

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(e) Effect on fighting efficiency.

None.

IV. General Summary of Observers' Impressions and Conclusions.

Additional information regarding this barge is included in the Bureau of Yards and Docks Report.

V. Recommendations.

None.

VI. Instructions for loading the vessel specified the following:

ITEM	LOADING
Diesel Oil	No special adjustments required except that no
Fuel Oil	inflammable cargo shal
Ammunition	be carried in tanks. Tanks may be ballasted
Potable and reserve feed water	with salt water, to adjust trim, immersion,

and list.

Salt water ballast

Details of the actual quantities of the various items aboard are included in Report 7, Stability Inspection Report, submitted by the ship's force in accordance with "Instructions to Target Vessels for Tests and Observations by Ship's force" issued by the Director for Ships Material. The report is available for inspection in the Bureau of Ships Crossroads Files.

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DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

The vessel suffered superficial damage to the concrete superstructure amidships, and severe damage to the wooden bridge house. The main hull girder is not affected. Though the paint is charred and blistered there is no evidence of fire damage. All damage was caused by blast. There was no flooding. General views of the vessel before and after test are on pages 32 to 40.

B. Superstructure.

The wooden enclosure around the tank house is blown down (Photos 1829-7, 8, pages 41 and 42). The wheel house is intact but is twisted to port and forward. The pipe railing on top of the wheel house is blown down. The life raft frame on the starboard side of the poop deck is blown inboard and is pulled completely out of the foundation anchorages. (Photos 1744-10, 1829-9, pages 44 and 43). Cinch bolts and shear plates on this foundation pulled out of the concrete. The supports for the control box for the steering motor splintered the poop deck locally exposing the anchorage bolts and the reinforcing bars (photo 1744-8, page 45).

The cover for the ventilation duct in the crew s space is dished to port. The spud locker is off its foundation, which is not damaged. A ready service ammunition box on the starboard side is lifted from its foundations.

The pump house amidships, sustained minor damage to concrete. The three transverse deck beams are cracked near the splays with the vertical house side frames. (Photo 1829-6, page 46). The outboard beam is splintered in a diagonal direction.

The top of the pump room house has two transverse cracks approximately one foot away from each bounding transverse bulkhead. There is also a longitudinal crack on the port edge of the house top approximately at mid-length.

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The top of the foremast is broken off. The flag pole on the poop deck is bent to port.

The above damage was caused by blast pressure.

C. Turrets, Guns and Directors.

No damage.

D. Torpedo Mounts, Depth Charge Gear.

Not Applicable.

E. Weather Deck.

The weather deck aft is damaged incident to the failure of certain foundations and falling equipment as discussed under Item B. There is no other damage.

F. Exterior Hull.

No damage.

G. Interior Compartments (above w.l.).

No damage.

H. Armor Decks and Miscellaneous Armor.

Not Applicable.

I. Interior Compartments (below w.l.).

No damage.

J. Underwater Hull.

No damage.

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K. Tanks.

No damage.

L. Flooding.

None.

M. Ventilation.

No damage.

N. Ship Control.

No damage.

O. Fire Control.

No damage.

P. Ammunition Behavior.

No damage.

Q. Ammunition Handling.

Not Applicable.

R. Strength.

No damage.

S. Miscellaneous.

No comment.

T. Coverings.

Paint on the house tops and on vertical surfaces facing to starboard is scorched and blistered. This was especially noticeable on wooden surfaces.

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TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

- I. 'Target Condition After Test.
 - (a) Drafts after test; list; general areas of flooding, sources.

No comment.

(b) Structural damage.

The vent pipe to the after peak tank was bent to port about 15 degrees at the point where it rises above the main deck. The wire cable of the steering gear from the pilot house was tightened by movement to port of the pilot house.

(c) Other damage.

The inlet pipe of the starboard generator engine was bent and ruptured near its upper end. This pipe was exposed to blast pressure. It had been greatly weakened by corrosion before Test A. There is no other damage to machinery.

- II. Forces Evidenced and Effects Noted.
 - (a) Heat.

Paint on vertical surfaces facing the explosion is scorched.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence.

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(d) Pressure.

Blast pressure pushed the wooden pilot house to port, tightened the steering control cable, and damaged the (already badly corroded) starboard engine muffler. The blast came from starboard.

(e) Effects apparently peculiar to the atom bomb.

Blast pressure and heat of such intensity are apparently peculiar to the atom bomb.

- III. Effects of Damage.
 - (a) Effect on machinery and ship control.

The test had no appreciable effect on machinery or ship control. The steering cable could be easily adjusted. Damage to the generator muffler was negligible and would not have occurred if the muffler had been in good condition. Machinery operable before the test was operated after it.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on water-tight integrity and stability.

No comment.

(d) Effect on personnel and habitability.

It is estimated that the test would have had no effect on personnel in protected locations, but that those exposed (including those in the wooden pilot house) would have been casualties. Habitability was not affected.

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(e) Total effect on fighting efficiency.

The efficiency of the vessel as a fuel barge was not impaired.

NOTE: This vessel has no propulsion machinery.

IV. General Summary.

YOG 83 was apparently a short distance outside the limit of serious damage to vessels of her type during Test A.

V. Preliminary Recommendation.

The flimsy wooden pilot house is inconsistent with the construction of the remainder of the vessel, and should be replaced by a stronger one.

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DETAILED DESCRIPTION OF MACHINERY DAMAGE

- A. General Description of Machinery Damage.
 - (a) Overall condition.

The overall condition of the machinery was not changed by Test A.

(b) Areas of major damage.

None.

- (c) Primary cause of damage in each area of major damage.

 Not Applicable.
- (d) Effect of target test on overall operation of machinery plant.

None.

B. Boilers.

Not Applicable.

C. Blowers.

Not Applicable.

D. Fuel Oil Equipment.

No damage.

E. Boiler Feedwater Equipment.

Not Applicable.

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F. Main Propulsion Machinery.

Not Applicable.

G. Reduction Gears.

Not Applicable.

H. Shafting and Bearings.

Not Applicable.

I. Lubrication System.

Not Applicable.

J. Condensers and Air Ejectors.

Not Applicable.

K. Pumps.

Not damaged.

L. Auxiliary Generators (Turbines and Gears).

Not Applicable.

M. Propellers.

Not Applicable.

N. Distilling Plant.

Not Applicable.

O. Refrigeration Plant.

Not damaged.

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P. Winches, Windlasses, and Capstans.

No damage. Both bow and stern equipment have been operated satisfactorily since Test A.

Q. Steering Engine.

Not damaged.

Wire cable controls from pilot house tightened due to movement to port of pilot house. These are easily and readily adjustable. The steering equipment has been operated satisfactorily since Test A.

R. Elevators, Ammunition Hoists, Etc..

Not Applicable.

S. Ventilation (Machinery).

Not damaged.

T. Compressed Air Plant.

Not damaged.

U. Diesels (Generators and Boats).

The engines are undamaged. The inlet pipe of the starboard generator engine muffler was bent and reptured near its upper end. This section was replaced and the generator operated after Test B. The damaged section was badly corroded and thereby weakened before Test A.

V. Piping Systems.

The vent pipe to the after peak tank was bent to port about 15 degrees at the point where it rises above the main deck. The pipe is not ruptured.

There is no other damage to piping.

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W. Miscellaneous.

No damage.

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TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

- I. Target Condition After Test.
 - (a) Drafts after test; list; general areas of flooding, sources.
 - 1. Drafts and list were the same as before the test.
 - 2. There was no flooding.
 - (b) Structural damage.

Wiring, fixtures and indicating instruments in pilot house structure and on mast were damaged due to distortion and splintering of wooden bulkheads and breakage of the wooden mast. Structural damage was caused by blast pressure.

(c) Other damage.

Electrical damage was confined to wiring and fixtures in way of structural damage to pilot house, bridge and masts.

- II. Forces Evident and Effects Noted.
 - (a) Heat.

Heat was indicated by scorched paint on exposed surfaces and scorched insulation on exposed wiring. Scorching occurred over the entire length of the vessel on the starboard side and on the after side of exposed thwartship bulkheads. Penetration was through the equivalent of one coat of paint. Vertical surfaces were scorched over the entire surface. Horizontal surfaces were scorched only near the starboard edge and on projections or humps on the horizontal surfaces.

(b) Fires and explosions.

There was no evidence of fires or explosions in way of SECRET U. S. S. YOG-83

electrical equipment.

(c) Shock.

There was no evidence of shock in way of electrical equipment.

(d) Pressure.

Pressure was evidenced by the forcing of the pilot house structure to port and forward and the wrecking of the wooden bulkheads of the pilot house structure. A negative pressure was indicated above the pilot house by the lifting off of the wooden roof of the pilot house without much disturbance to the sheating underneath.

(e) Effects peculiar to the Atom Bomb.

Evidence of extreme heat in open spaces without combustion is an effect apparently peculiar to the Atom Bomb.

III. Effects of Damage.

(a) Effect on electrical equipment and ship control.

Steering gear wire control from pilot house was out of adjustment due to the distortion of the wood structure from which it was supported. No other damage was apparent to electrical machinery or ship control.

- (b) Effect on gunnery and fire control.
 - No electrical damage affected gunnery or fire control.
- (c) Effect on water-tight integrity and stability.

No electrical damage affected water-tight integrity or stability.

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(d) Effect on personnel and habitability.

No electrical damage affected personnel or habitability.

(e) Total effect on fighting efficiency.

Fighting efficiency wan slightly reduced due to damage to steering control from the pilot house.

IV. General Summary of Observer's Impressions and Conclusions.

Electrical damage was superficial and easily repairable by the ships force. Running lights and signal lights were the only items damaged.

V. Recommendations.

None.

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DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

- A. General Description of Electrical Damage.
 - (a) Overall condition.

The overall condition of the electric plant is essentially the same as before the test.

(b) Areas of major damage.

Bridge and pilct house.

(c) Primary causes of damage in each area of major damage.

Blast.

- (d) Effect of target test on overall operation of electric plant.
 - 1. Ship's service generator plant: No effect.
 - 2. Engine and boiler auxiliaries: Not applicable.
 - 3. Electric propulsion: Not applicable.
 - 4. Communications: No effect.
 - 5. Fire control circuits: No effect.
 - 6. Ventilation: No effect.
- 7. Lighting: General lighting was unaffected, but range light and aircraft warning light were blown off supports.
 - (e) Types of equipment most affected.

Running lights and signal lights.

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B. Electric Propulsion Rotating Equipment.

Not applicable.

C. Electric Propulsion Control Equipment.

Not applicable.

D. Ship's Service Generators.

No damage.

E. Emergency Generators.

Not applicable.

F. Switchboards and Distribution Panels.

No damage.

G. Wiring, Wiring Equipment and Wire ways.

A few local cables on bridge structure and masts were ruptdured or displaced due to rupture of the wooden structure to which they were secured.

H. Transformers.

Not applicable.

I. Submarine Propelling Batteries.

Not applicable.

I. Portable Batteries.

No damage.

K. Motors, Motor Generator Sets and Motor Controllers.

No damage.

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- L. Lighting Equipment.
 - (a) Range light blown off support.
- (b) Aircraft warning light carried away due to breaking of wood mast.
- M. Searchlights.

Paint and portable cable scorched on 12" searchlight starboard and on starboard flood lights.

N. Degaussing Equipment.

Not applicable.

O. Gyro Compass Equipment.

Not applicable.

P. Sound Powered Telephones.

No damage.

Q. Ship's Service Telephones.

Not applicable.

R. Announcing Systems.

Not applicable.

S. Telegraphs.

Not applicable.

T. Indicating Systems.

Rudder angle indicator, lamp type, on forward bulkhead of pilot house has glass broken due to warping of bulkhead.

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U. I. C. and A. C. O. Switchboards.

Not applicable.

V. F.C. Switchboards.

Not applicable.

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SECTION IV

PHOTOGRAPHS

TEST ABLE

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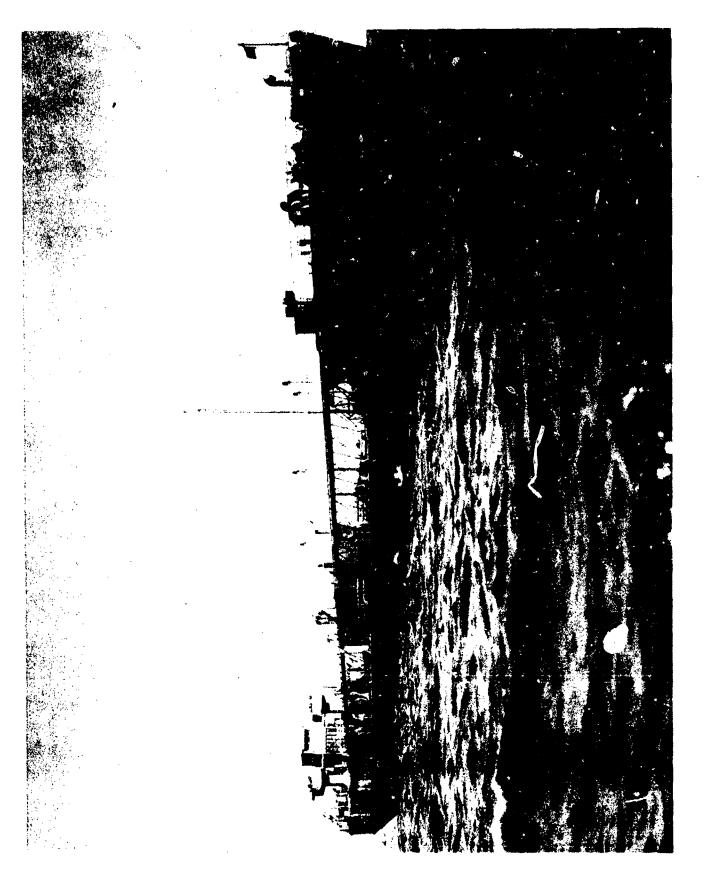
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BA-CR-82-1549-12. View from starboard bow before Test A.

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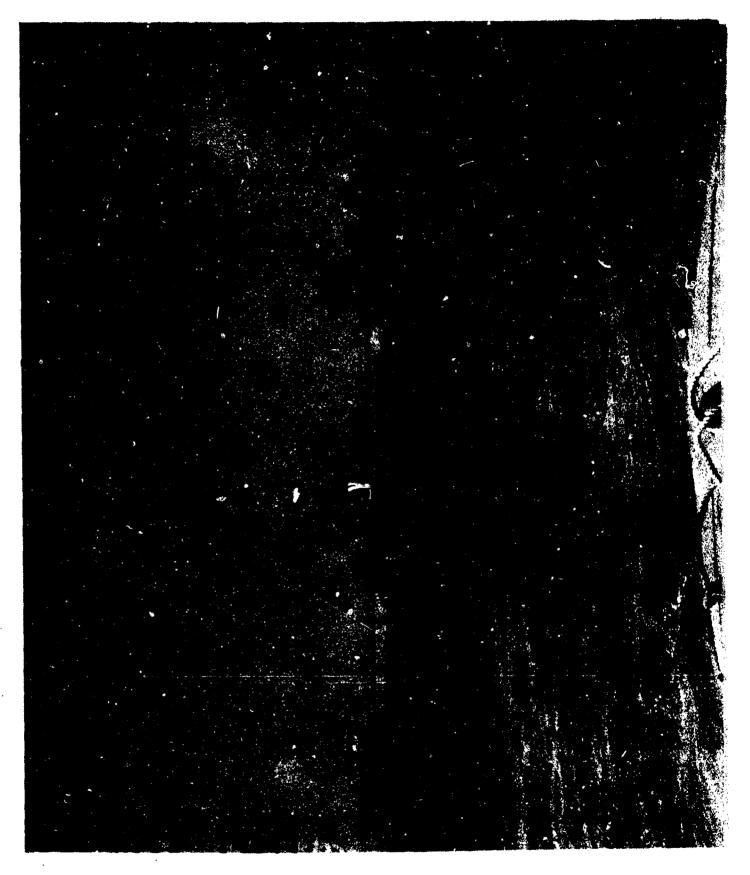
AA-CR-227-91-27. View from starboard bow after Test A.

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BA-CR-82-1549-10. View from port quarter before Test A.

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AA-CR-227-91-28. View from port quarter after Test A.



AA-CR-227-91-23. View from bow after Test A.

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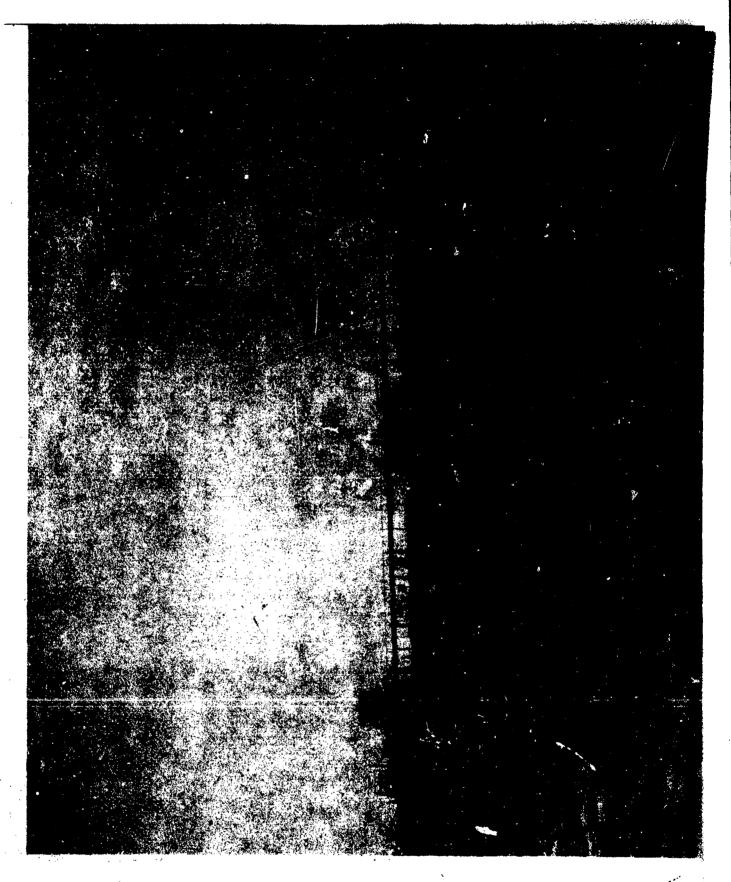
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AA-CR-227-91-22. View from off port beam after Test A.

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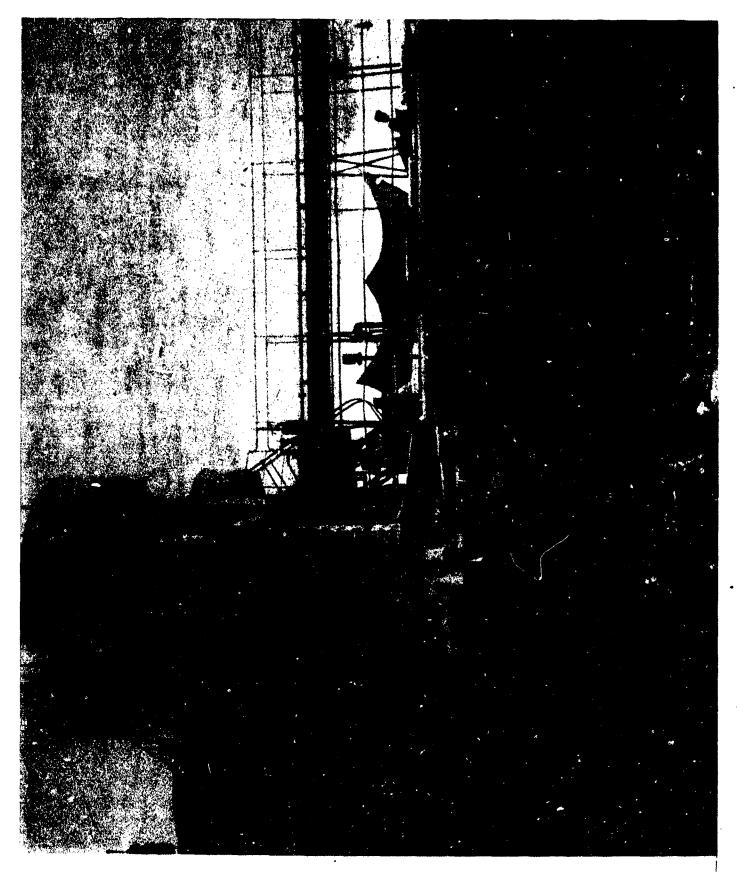
AA-CR-227-91-26. View from off starboard beam after Test A.

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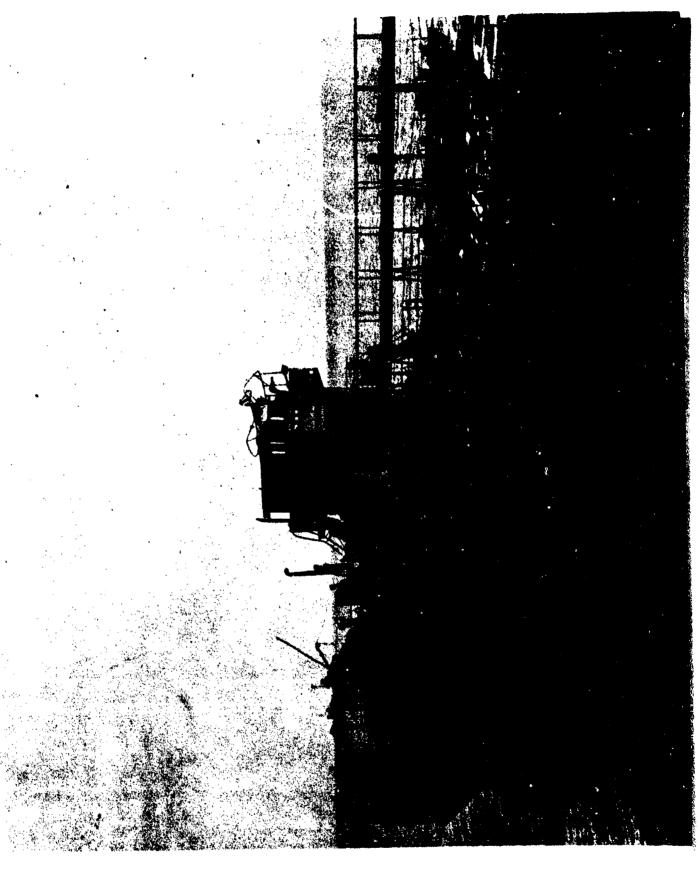
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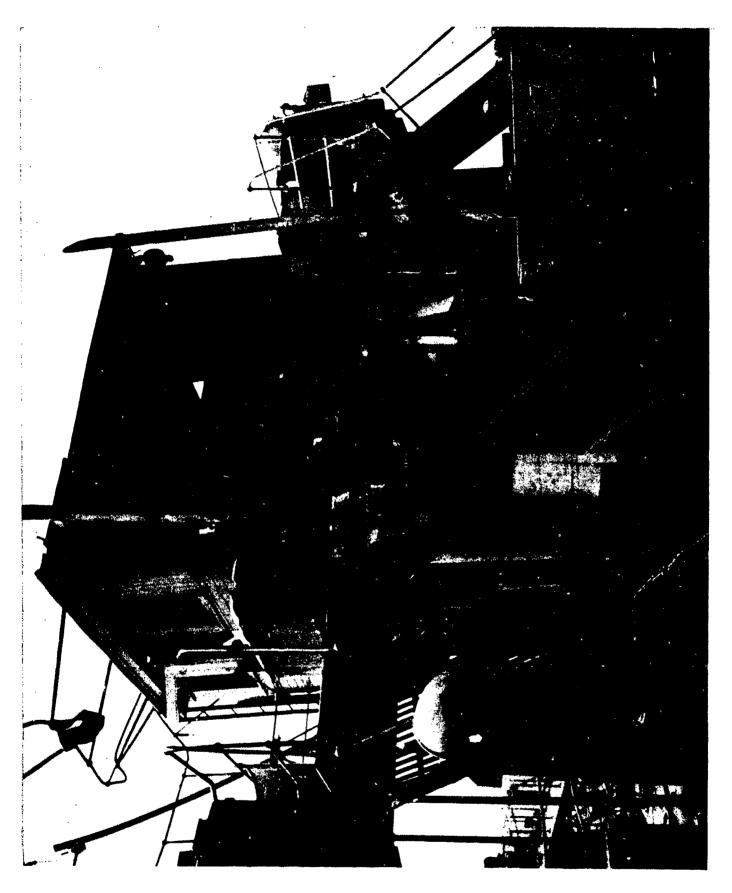
BA-CR-82-85-2. Damage to starboard side before Test A.



AA-CR-68-1744-4. After deck house from starboard.

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AA-CR-82-1829-7. Wooden bridge house, showing port and after sides.

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AA_CR_82_1829_8. Wooden bridge house, starboard side, looking to port.

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AA-CR-82-1829-9. Displaced life raft rack on poop deck, starboard side.

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AA-CR-68-1744-10. Displaced life raft rack on poop deck, starboard side.

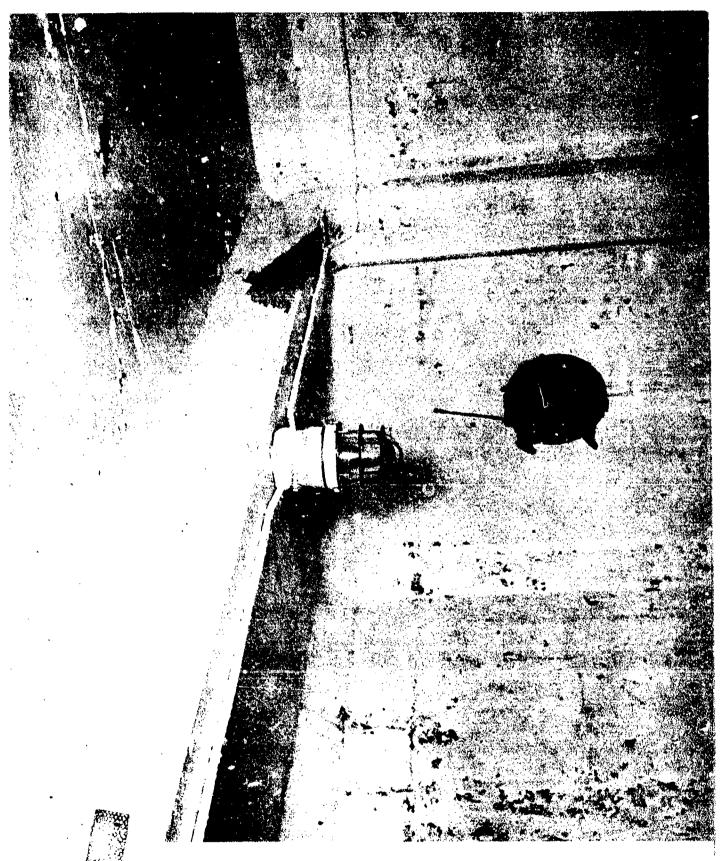
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AA-CR-68-1744-8. Damage to deck from falling object.



AA CR 82-1829-6. Deck beam of pump room house.

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Defense Special Weapons Agency 6801 Telegraph Road Alexandria, Virginia 22310-3398

TRC

18 April 1997

MEMORANDUM FOR DEFENSE TECHNICAL INFORMATION CENTER ATTENTION: OMI/Mr. William Bush (Security)

SUBJECT: Declassification of Reports

The Defense Special Weapons Agency has declassified the following reports:

J 1	
✓AD-366588 4	XRD-203-Section 12
× —— AD-366589▶	XRD-200-Section 9
AD-366590 L	XRD-204-Section 13
AD-366591	XRD-183 /
✓ ✓ AD-366586 ∢	XRD-201-Section 10
V AD-367487. K	XRD-131-Volume 2-
✓AD-367516 屮	XRD- ₹ 143 ~
✓ AD-367493 Ľ	XRD-142 ►
AD-801410L	XRD-138✓
AD-376831L 🗸	XRD-83►
AD-366759	XRD-80 ✓
√ ∠ AD-376830L ↓	XRD-79 ✓
/ ✓AD-376828L ❤	XRD-76
/VAD-367464.X	XRD-106 ✓
AD-801404L V	XRD-105-Volume 1
✓AD-367459 X	XRD-100/

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√ AD-367517 **∤** XRD-141 ✓ AD-366762 XRD-84 ► AD-366760₩ XRD-81► AD-3667611/ XRD-82 -AD-367501 XRD-158-Volume 1 AD-367507L V XRD-152-Volume 4 ✓ AD-367495 🖟 XRD-184 ✓AD-367485 ₩ XRD-129℃ ✓AD-367484 ¥ XRD-128 ✓ **∕**AD-367483 **X** XRD-127℃ **√**AD-367482**X** XRD-126**₽** AD-367488 XRD-132 ✓_{AD-367480} ∤ XRD-124~ AD-801409L√ XRD-135 ► ✓AD-367490**火** XRD-136▶ ✓AD-367492 **X** XRD-137✓ AD-801411L V XRD-139 ₩ ✓AD-367518 **X** XRD-140 ✓ AD-367515 √ XRD-144 ✓ AD-367514 V XRD-145 ✓ ✓AD-367468 **X** XRD-110-Volume 2 ✓

AD-367513V

✓AD-367497**X**

XRD-146 ✓

XRD-162

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AD-801406L XRD-114.

In addition, all of the cited reports are now approved for public release; distribution statement "A" now applies.

Indith Sanet

Chief, Technical Resource Center